



## A Retrospective Case Study Of Clinical Patterns Of Eczema And Contact Dermatitis Among Adult Females

<sup>1</sup>Dr. Jayasri. J, <sup>2</sup>Dr. M Arul Selvan

<sup>1</sup>Senior Resident, <sup>2</sup>Junior Resident,

Department Of Dermatology, Government Kallakurchi Medical College And Hospital,  
Kallakurchi, Tamil Nadu, India

**\*Corresponding Author:**

**Dr. M Arul Selvan**

Junior Resident, Department Of Dermatology, Government Kallakurchi Medical College And Hospital,  
Kallakurchi, Tamil Nadu, India

Type of Publication: Original Research Paper

Conflicts of Interest: Nil

### Abstract

**Introduction:** Eczema is defined as a reaction pattern of the skin due to various exogenous and endogenous factors acting singly, or in combination, characterized clinically by erythema, papules, vesicles, oozing, and crusting followed by lichenification. The clinical patterns of eczema vary widely depending on age, gender, geographical location, urbanization, etc. There are only a few studies regarding the prevalence of eczema among the adult population, especially females.

**Aim of the study:** To estimate the epidemiological indices and clinical patterns of eczema and contact dermatitis among adult female patients attending the Dermatology OPD of a tertiary care hospital in Tamilnadu, South India.

**Methods:** This is a retrospective cross-sectional study, wherein adult female patients who attended the Dermatology OPD at Government Kallakurchi Medical College And Hospital, Kallakurchi, Tamil Nadu, India, for 6months (July -Dec 2019) were analyzed. As per standard protocol, those patients were evaluated by detailed history including occupation, personal or family history of atopy, and contact with possible allergens and irritants. A thorough clinical examination was done and patch tests were done in appropriate cases. patients with eczematous dermatosis were classified broadly into exogenous and endogenous types and then subclassified based on history, morphology, and patch test results. The results are then tabulated and analyzed.

**Results:** A total of 13,519 adult females had attended the Dermatology OPD during the study period, of which 1,041 were found to have eczema and contact dermatitis, constituting a prevalence rate of 7.7%. Of these, 575 (55.23%) were exogenous, 402 (38.61%) were endogenous and 64 (6.14%) were non-eczematous contact dermatitis. The most affected age group was 30-50 years, constituting 53.6% of the whole study group. Personal or family history of atopy was found in 87 patients (8.4%) As per patch test results, detergents (37.2%) were found to be the major cause of exogenous eczemas followed by footwear (10.9%) Seborrhoeic dermatitis (23.4%) and Hand eczema (20.2%) were the most common endogenous eczema. Chemical leucoderma (52%) was the most common non-eczematous contact dermatitis. Housewives constitute the major group affected (47.2%). The number of cases was found to be highest in July – December.

**Conclusion:** There was an increased incidence of ACD in atopic patients and more incidence of 2+ positivity. Nickel was the most common allergen causing ACD in atopic individuals. Eosinophilia was more common among atopic and in patients with ACD to Nickel. The average duration between the exposure of the allergen and manifestation of ACD was commonly between 2 to 5 years. Occupational causes of allergic contact

dermatitis were twice common as non-occupational cases. Patients with Diabetes mellitus have an increased incidence of 1+ positivity due to immunosuppression.

**Keywords:** Eczema, contact dermatitis, clinical patterns

## Introduction

Eczema which means 'to boil' is the inflammation of the skin which occurs in a wide range of dermatoses characterized by itching, dryness, erythema, excoriation, exudation, fissuring, hyperkeratosis, scaling, vesiculation, and lichenification. It is classified as acute, sub-acute, and chronic forms characterized by vesicles and oozing lesions, scaling and crusting, and lichenification respectively.[1] Allergic Contact Dermatitis is a very common type of skin disorder seen among patients attending dermatology clinics. Allergic contact dermatitis occurs when the skin comes in contact with an allergen that the skin is sensitive or allergic to. Allergic contact dermatitis occurs more commonly in adults.[2] In other words, Allergic contact dermatitis is caused by the body's reaction to something that directly contacts the skin. Many different substances can cause allergic contact dermatitis, which is called 'allergens'. like fragrances, small molecule preservatives, etc. [3] Usually these substances cause no trouble for most people, and may not even be noticed the first time the person is exposed. But once the skin becomes sensitive or allergic to the substance, any exposure will produce a rash. [4] Allergic contact dermatitis is the inflammation of the skin manifested by varying degrees of erythema, edema, and vesiculation. It is a delayed-type of induced sensitivity (allergy) resulting from cutaneous contact with a specific allergen to which the patient has developed a specific sensitivity. Diagnosis of Allergic contact dermatitis is done by doing Patch tests. Climate, by varying UV exposure, heat, and relative humidity, may play a part in liability to contact allergy. [5] UVB exposure has been shown to diminish the skin's immune response to contact allergens. Chapping of skin during winter predisposes to irritant contact dermatitis and false-positive patch test reactions. Allergenicity of *Primula obconica* varies with light and season.[6] Allergenic plants of the Compositae family are destroyed by cold and frosty weather and return during warmer months. The

distribution of allergenic plant material will be facilitated by dry and windy climates. Fauna is not a major seasonal cause of contact allergy. [7] The pattern of perfume, cosmetic and jewelry use, and exposure might vary according to social class. Hair dyes are more commonly used by men in India, and Indian women become sensitized to dyes and adhesives in kumkum and bindi [8]

## Methods

This is a retrospective cross-sectional study, wherein adult female patients who attended the Dermatology OPD at Government Kallakurchi Medical College And Hospital, Kallakurchi, Tamil Nadu, India, for 6 months (July -Dec 2019) were analyzed. As per standard protocol, those patients were evaluated by detailed history including occupation, personal or family history of atopy, and contact with possible allergens and irritants. A thorough clinical examination was done and patch tests were done in appropriate cases. patients with eczematous dermatosis were classified broadly into exogenous and endogenous types and then subclassified based on history, morphology, and patch test results. A detailed history of the patients included in the study was taken. Duration and the type of occupation were noted for occupational cases of ACD. Morphology of the lesions and the sites of involvement were noted down. History, symptoms, and signs suggestive of Atopy were noted down. History of the patient for similar complaints was asked for. History of any drug intake before and after the onset of lesions is noted down. All the patients have been subjected to blood investigations namely routine hemogram and blood sugar. Based on the type and nature of exposure to a specific occupation or antigen, the patients were patch tested with the appropriate antigens. The patch test allergens used were approved by the Contact and Occupational Dermatoses Forum of India (CODFI) The results are then tabulated and analyzed.

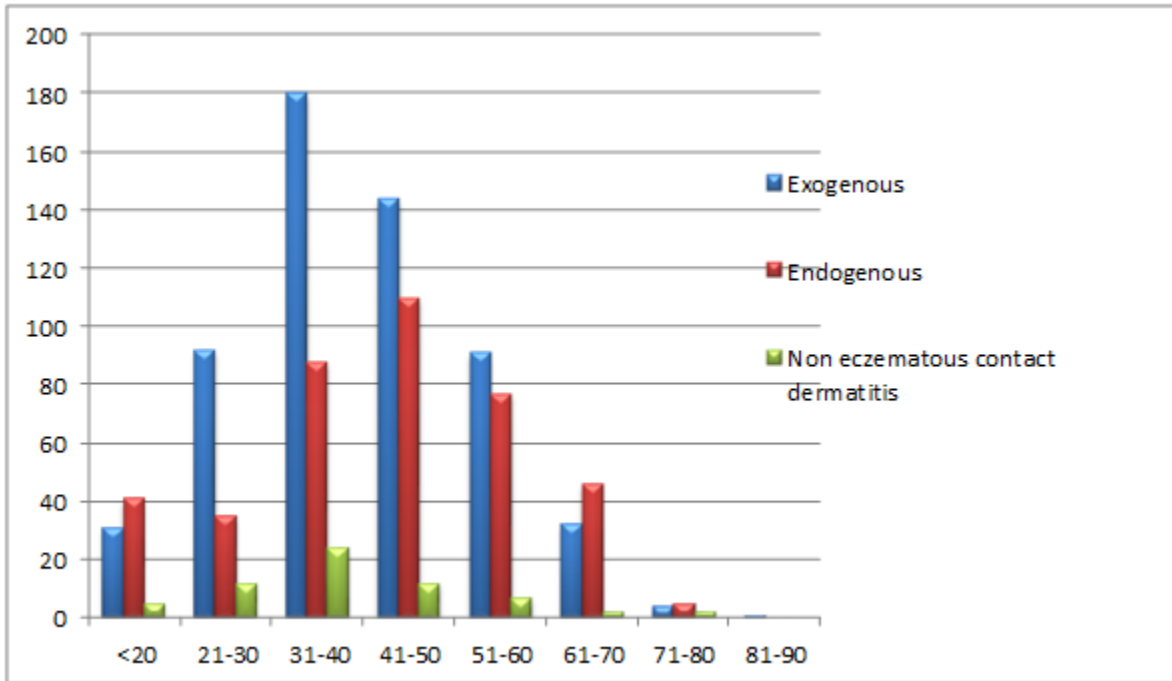
## Statistical Analysis

The collected data was entered for analysis in Microsoft Excel. This data was exported to Statistical Package for Social Sciences software (SPSS) version 22.0. Mean, standard deviations, and the range was

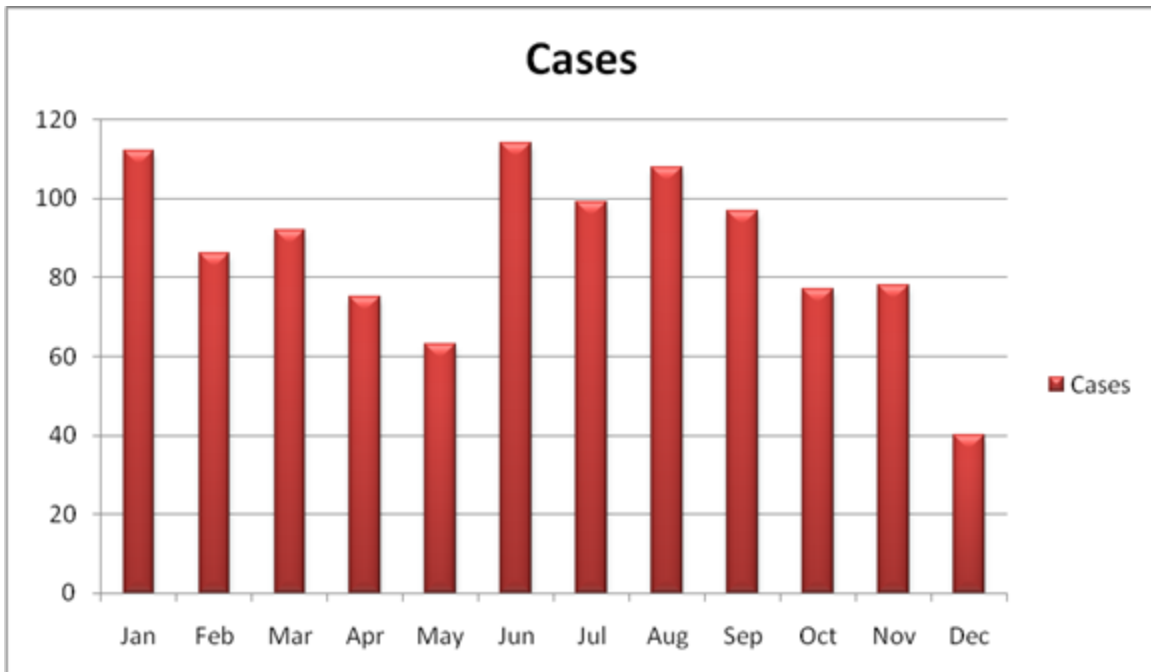
employed to describe continuous variables, while frequency distributions were obtained for dichotomous variables.

**Results :**

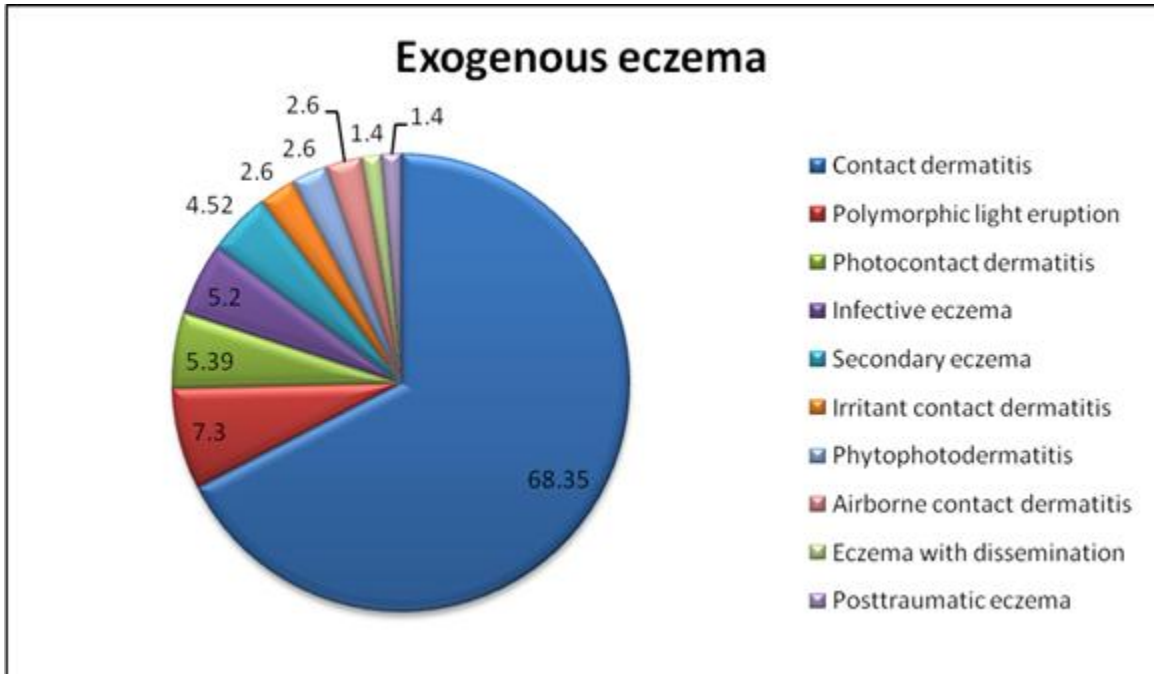
**Graph :1 Age-Wise Distribution**



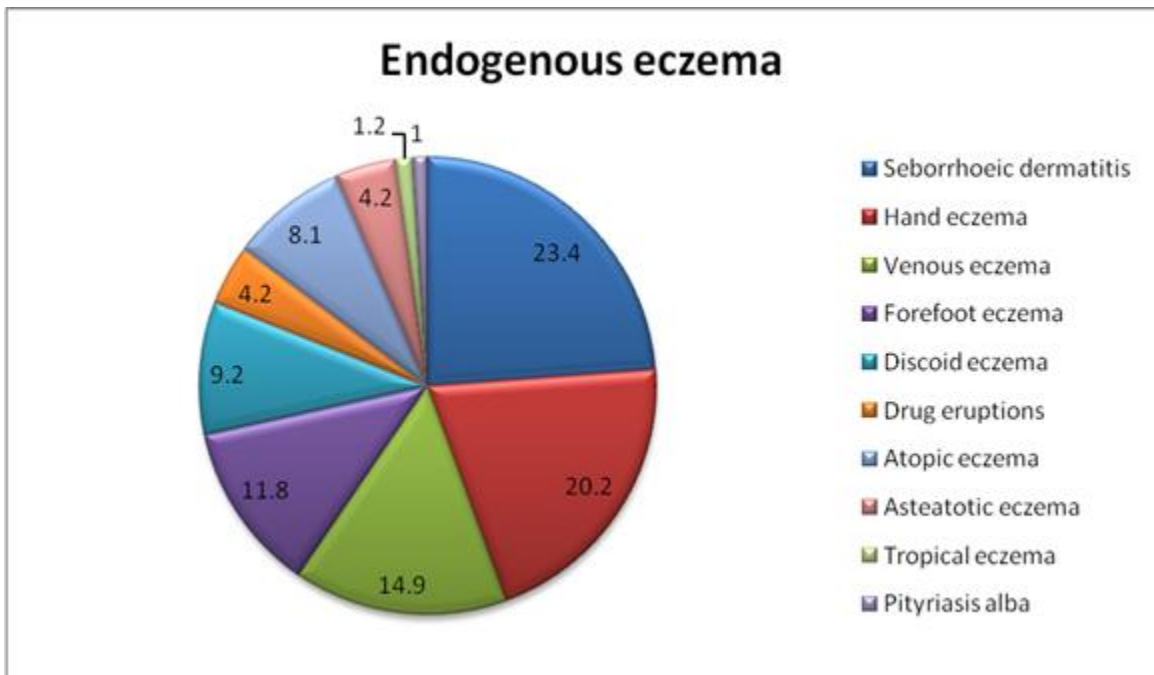
**Graph:2 Seasonal Variation**



Graph :3 Exogenous Eczema Patterns



Graph:4 Endogenous Eczema Patterns





Graph:6 Non Eczematous Contact Dermatitis

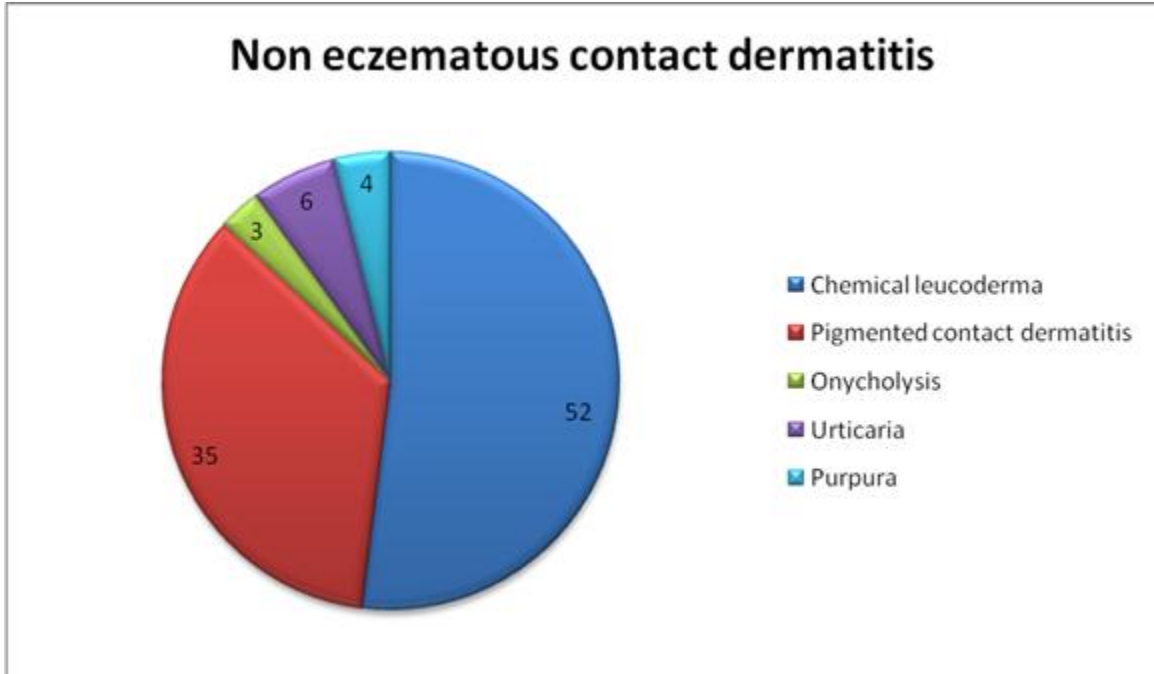


Fig 1: Contact dermatitis to nickel



Fig 2: Asteatotic eczema



Fig 3: Positive patch test for parthenium



Fig 4: Contact Leucoderma

**Discussion:**

Eczema accounts for a considerable proportion of patients attending skin clinics. In a study conducted in Libya, the proportion of eczema cases among the total dermatology outpatient records was 12.8% whereas, in a Swedish study, that was conducted among only adult patients, it was 11.5%. Our study, being conducted only among the adult female population was found to be 7.7%. Another study conducted in Eastern India showed 4.38% of eczema among total Dermatology OPD attendees[9]. The most common age group affected was 30-50 years (53.6%) in our study. In the Libyan study, it is in the third decade while in a Bangladeshi study, after the 0-5 years age group, patients in the second and third decade are the most affected. In the East Indian study, it was the fifth decade.[10]The seasonal variation shows the highest number of cases in our study during January and July followed by a decline in the upcoming months. In the Libyan study, the peak was in June.[11]Housewives were the most affected in our study and this concurs with that of the East Indian study. However, Detergents were found to be the most common offending agent in our study while in the East Indian study, it was vegetables followed by detergents.[12] Exogenous eczema was the most common type in our study which concurs with the Libyan study results.[13] In a Bangladeshi study, endogenous eczema (Seborrhoeic dermatitis) was found to be the most common type. The wide variation of the epidemiological aspects in different studies implicates the role of the environmental and geographical location of people across the world.[14,15]

**Conclusion:**

There was an increased incidence of ACD in atopic patients and more incidence of 2+ positivity. Nickel was the most common allergen causing ACD in atopic individuals. Eosinophilia was more common among topics and in patients with ACD to Nickel. The average duration between the exposure of the allergen and manifestation of ACD was commonly between 2 to 5 years. Occupational causes of allergic contact dermatitis were twice common as non-occupational cases. Patients with Diabetes mellitus have an increased incidence of 1+ positivity due to immunosuppression

**References**

1. Adams RM. Diagnostic Patch testing. In: Occupational Skin Disease. New York: Grune and Stratton, 1983: 136.
2. Bloch B, Steiner-Woerlich A. Arch Dermatol Syphilol 1926; 152: 283- 303.
3. Landsteiner K, Jacobs J. Studies on the sensitization of animals with simple chemical compounds. J Exp Med 1936; 64: 629-39.
4. Haxthausen H. The Pathogenesis of allergic eczema was elucidated by transplantation experiments on identical twins. Acta Derm Venereol 1942; 23: 438-57.
5. Jadassohn J. Zur Kenntnis der medicamentosen dermatosen. In 1896; 103-29.
6. Bloch B, Experimentelle Studien uber das Wesen der Iodoformidiosynkrasie. Z Exp Pathol Ther 1911; 9: 509-38.
7. Bloch B. The role of idiosyncrasy and allergy in dermatology. Arch Dermatol Syphilis 1929; 19: 175-97.
8. Scheper RJ, Von Blomberg MA. Mechanisms of allergic contact dermatitis to chemicals. Allergic Hypersensitivities are induced by chemicals. Recommendations for prevention. Boca Raton, FL: CRC Press, 1996.
9. Wolff K, Stingl G. The Langerhan's cell. J Invest Dermatol 1983; 80: 17-21.
10. Carr MM, Botham PA, Gawkrödger DJ, et al. Early cellular reactions induced by dinitrochlorobenzene in sensitized humans. Br J Dermatol 1984; 110: 637-41.
11. Matzinger P. An innate sense of danger. Semin immunol 1998; 10: 399-415.
12. Frey JR, Wenk P. Experimentelle Untersuchungen zur pathogenese des Kontaktekzems. Dermatologica 1956; 112: 265-305.
13. Hoefakker S, Cabo M, Vant Erve EHM, et al. In vivo cytokine profiles in allergic and irritant contact dermatitis. Contact dermatitis 1995; 33: 258-67.
14. Kimber I, Dearman RJ. Allergic contact dermatitis: The cellular effects. Contact dermatitis 2002; 46: 1-5. Trautmann A, Akdis M,

Kleemann D, et al. T-cell mediated Fas – Induced keratinocyte apoptosis plays a key pathogenetic role in eczematous dermatitis. *J Clin Invest* 2000; 106: 25-35.

15. Cresswell P. Antigen recognition by Lymphocytes. *Immunol Today* 1987; 8: 67-9.  
19. Breathnach SM, Katz SI. Cell-mediated immunity and the skin. *Hum Pathol* 1986; 17: 161-7.